

CLAIMS

What is claimed is:

- 1 1. A method of identifying one or more items from amongst a plurality of items in response to a spoken utterance, the method comprising:
 - 3 using an automatic speech recognizer to recognize the utterance, including
 - 4 generating a plurality of hypotheses for the utterance; and
 - 5 generating a query element based on the utterance, for use in identifying one
 - 6 or more items from amongst the plurality of items, such that the query element
 - 7 includes values representing two or more hypotheses of the plurality of hypotheses.
- 1 2. A method as recited in claim 1, wherein the query element includes values
- 2 representing a best hypothesis and a hypothesis other than the best hypothesis from
- 3 the plurality of hypotheses.
- 1 3. A method as recited in claim 1, wherein the query element includes values
- 2 representing all of the plurality of hypotheses.
- 1 4. A method as recited in claim 1, wherein the query element is a vector.
- 1 5. A method as recited in claim 1, wherein each of the hypotheses includes one or
- 2 more words, wherein the query element includes a set of values, each value
- 3 corresponding to one of said words, and wherein the method further comprises
- 4 weighting each of the values in the query element based on a confidence measure of
- 5 the hypothesis that includes the word corresponding to said value.

- 1 6. A method as recited in claim 5, wherein the confidence measure of each
2 hypothesis is based on a rank of said hypothesis among the plurality of hypotheses.
- 1 7. A method as recited in claim 5, wherein the method further comprises weighting
2 each of the values in the query element based on a confidence measure of the word
3 corresponding to said value.
- 1 8. A method as recited in claim 1, further comprising applying the query element to
2 the plurality of items to identify one or more items from amongst the plurality of
3 items.
- 1 9. A method as recited in claim 8, wherein each of the items is a destination in a call
2 routing system.
- 1 10. A method as recited in claim 9, wherein each of the items is a dataset in an
2 information retrieval system.
- 1 11. A method as recited in claim 1, wherein the plurality of items are items of text
2 data.
- 1 12. A method as recited in claim 1, wherein the plurality of items are items of audio
2 data.
- 1 13. A method of identifying one or more items from amongst a plurality of items in
2 response to a spoken utterance, the method comprising:
3 using an automatic speech recognizer to recognize the utterance, including
4 generating a plurality of hypotheses for the utterance, wherein each of the

5 hypotheses includes one or more words;
6 generating a query element for use in identifying one or more items from
7 amongst the plurality of items, wherein the query element includes a set of values
8 representing all of the plurality of hypotheses, each value corresponding to one of
9 said words; and

10 weighting each of the values in the query element based on a confidence
11 measure of the hypothesis that includes the word corresponding to said value,
12 wherein the confidence measure of each hypothesis is based on a rank of the
13 hypothesis among the plurality of hypotheses.

1 14. A method as recited in claim 13, further comprising weighting each of the values
2 in the query element based on a confidence measure of the word corresponding to
3 said value.

1 15. A method as recited in claim 13, further comprising applying the query element
2 to the plurality of items to identify one or more items from amongst the plurality of
3 items.

1 16. A method as recited in claim 15, wherein each of the items is a destination in a
2 call routing system.

1 17. A method as recited in claim 15, wherein each of the items is a dataset in a
2 database in an information retrieval system.

1 18. A method as recited in claim 13, wherein the plurality of items are items of text
2 data.

1 19. A method as recited in claim 13, wherein the plurality of items are items of audio
2 data.

1 20. An apparatus for identifying one or more items from amongst a plurality of
2 items in response to a spoken utterance, the apparatus comprising:

3 means for using an automatic speech recognizer to recognize the utterance,
4 including generating a plurality of hypotheses for the utterance; and
5 means for generating a set of values representing a query, for use in
6 identifying one or more items from amongst the plurality of items, the set of values
7 including values representing a best hypothesis and a hypothesis other than the best
8 hypothesis from the plurality of hypotheses.

1 21. An apparatus as recited in claim 20, wherein the set of values includes values
2 representing all of the plurality of hypotheses.

1 22. An apparatus as recited in claim 20, wherein each of the hypotheses includes one
2 or more words, wherein each value of the set of values corresponds to one of said
3 words, and wherein the apparatus further comprises means for weighting each of
4 the values based on a confidence measure of the hypothesis that includes the word
5 corresponding to said value.

1 23. An apparatus as recited in claim 22, wherein the confidence measure of each
2 hypothesis is based on a rank of the hypothesis among the plurality of hypotheses.

- 1 24. An apparatus as recited in claim 22, wherein the apparatus further comprises
2 means for weighting each of the values in the set of values based on a confidence
3 measure of the word corresponding to said value.
- 1 25. An apparatus as recited in claim 20, further comprising means for applying the
2 set of values to the plurality of items to identify one or more items from amongst the
3 plurality of items.
- 1 26. An apparatus as recited in claim 25, wherein the apparatus is part of a call
2 routing system, such that each of the plurality of items is a call destination.
- 1 27. An apparatus as recited in claim 25, wherein the apparatus is part of an
2 information retrieval system, such that each of the plurality of items is a dataset in a
3 database of the information retrieval system.
- 1 28. An apparatus as recited in claim 20, wherein the plurality of items are items of
2 text data.
- 1 29. An apparatus as recited in claim 20, wherein the plurality of items are items of
2 audio data.
- 1 30. An information retrieval system comprising:
2 a database;
3 an information retrieval engine to identify and retrieve one or more items
4 from the database which satisfy a text-based query; and
5 an automatic speech recognizer to generate the query in response to an

6 utterance of a user, the automatic speech recognizer configured to:
7 generate a plurality of hypotheses for the utterance; and
8 generate a query element representing the query, the query element
9 including values representing two or more hypotheses of the plurality of
10 hypotheses.

1 31. An information retrieval system as recited in claim 30, wherein the query
2 element includes values representing all of the plurality of hypotheses.

1 32. An information retrieval system as recited in claim 31, wherein each of the
2 hypotheses includes one or more words, wherein each value in the query element
3 corresponds to one of said words, and wherein the method further comprises
4 weighting each of the values in the query element based on a confidence measure of
5 the hypothesis that includes the corresponding word.

1 33. An information retrieval system as recited in claim 32, wherein the confidence
2 measure of each hypothesis is based on a rank of the hypothesis among the plurality
3 of hypotheses.

1 34. An information retrieval system as recited in claim 32, wherein the automatic
2 speech recognizer is further configured to weight each of the values in the query
3 element based on a confidence measure of the word corresponding to said value.

1 35. An information retrieval system as recited in claim 30, wherein the information
2 retrieval engine uses the query to retrieve text data satisfying the query from the
3 database.

1 36. An information retrieval system as recited in claim 30, wherein the information
2 retrieval engine uses the query to retrieve audio data satisfying the query from the
3 database.

1 37. A call routing system comprising:
2 a database;
3 a call routing engine to identify and provide a caller with access to a call
4 destination which satisfies a text-based query; and
5 an automatic speech recognizer to generate the query in response to an
6 utterance of the caller, the automatic speech recognizer configured to:
7 generate a plurality of hypotheses for the utterance; and
8 generate a query element representing the query, the query element
9 including values representing two or more hypotheses of the plurality of
10 hypotheses.

1 38. A call routing system as recited in claim 37, wherein the query element includes
2 values representing all of the plurality of hypotheses.

1 39. A call routing system as recited in claim 38, wherein each of the hypotheses
2 includes one or more words, wherein each value in the query element corresponds
3 to one of said words, and wherein the method further comprises weighting each of
4 the values in the query element based on a confidence measure of the hypothesis
5 that includes the corresponding word.

1 40. A call routing system as recited in claim 39, wherein the confidence measure of
2 each hypothesis is based on a rank of the hypothesis among the plurality of
3 hypotheses.

1 41. A call routing system as recited in claim 39, wherein the automatic speech
2 recognizer is further configured to weight each of the values in the query element
3 based on a confidence measure of the word corresponding to said value.

1 42. A call routing system as recited in claim 37, wherein the information retrieval
2 engine uses the query to retrieve text data satisfying the query from the database.

1 43. A call routing system as recited in claim 37, wherein the information retrieval
2 engine uses the query to retrieve audio data satisfying the query from the database.